

DRAFT

i-Motor

iMT1 Series

- Lower Space
- Easy Connection
- User Customize Available



i-Motor can be used various applications on your idea, and can help reduction in costs of customer's devices.

NIDEC-SERVO CORPORATION

•Summaries of product characteristics

- **iMT1** is The Three-Phase stepping motor with built-in motor driver circuit.
- **iMT1** can be driven by pulse signal input as well as general stepping motor driver circuit.
- **iMT1** can make rotation with Low-Vibration specially in low-speed area, by driving Three-Phase stepping motor in Microstep (Max 32 divisions).
- The microcomputer is installed , that possible to execute simple sequence motions.
- The serial communication facility is installed, and the parameter and the sequence pattern can be changed from the personal computer.

•The advantage of (all-in-one design) circuit built-in type motor

In becoming of a separate motor and the drive circuit in the past one, various advantages arise.
For example...

- **Downsizing of customer's machine.**
- **Reduce the man-hour in installation and assembly (man-hour).**
- **Decrease the electromagnetic radiation noise.**
- **Cost-down of customer's machine. etc...**

•How To Use

Customer can select two operation modes of **iMT1** as below.
These operation modes can be changed by "Tuning software".

(1) Pulse Input Operation Mode

By given pulse signal and rotation direction signal, it will be driven as well as the combination of a general stepping motor and the drive circuit.

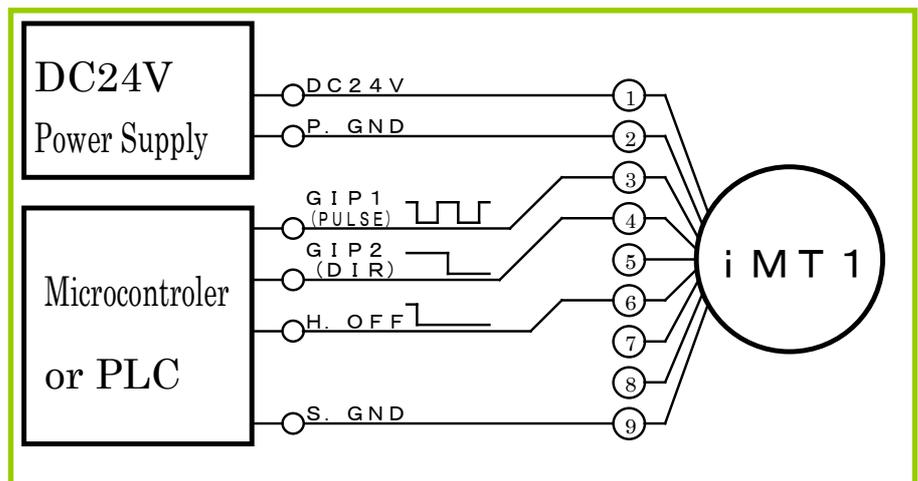


Figure A. Example of connecting wires when pulse input operates

(2) Programmed Operation Mode

The operation program decided beforehand download to **iMT1**, and after the power supply is turned on, the operation is executed repeatedly.

The signal of the switch and the sensor can be input directly to the terminal, and the condition branching can be done in the state of those signals. As a result, if it is easy operation, a master controller becomes unnecessary.

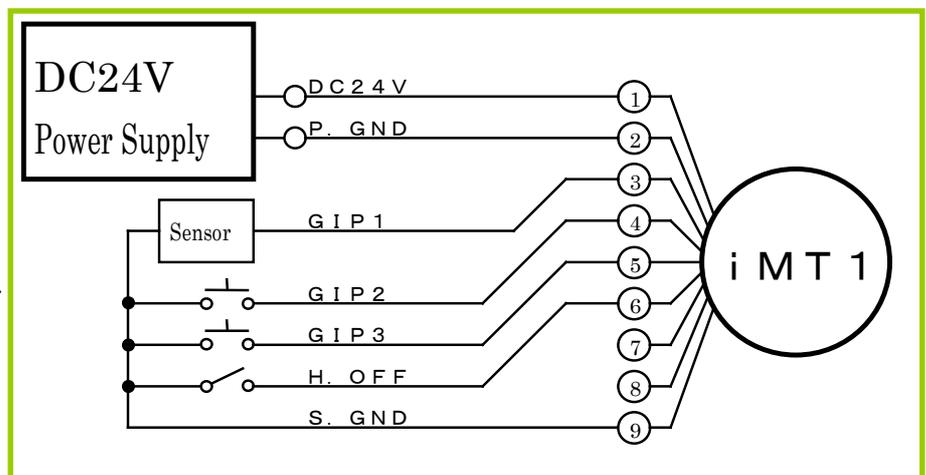


Figure B. Example of connecting wires when program operates

•Communication Function

iMT1 installs the Flash microcomputer, and can rewrite an internal parameter and the sequence data from the Personal Computer (PC).

The Communication with PC is done through RS-232C Interface. For the signal level converter, is using “Communication Adapter”. (※1)

The Software(for Windows version) for parameter editing and downloading will be distributed without no charge.

※1 : The Communication adapter will be sold optionally, and this circuit drawing will be opened to public.

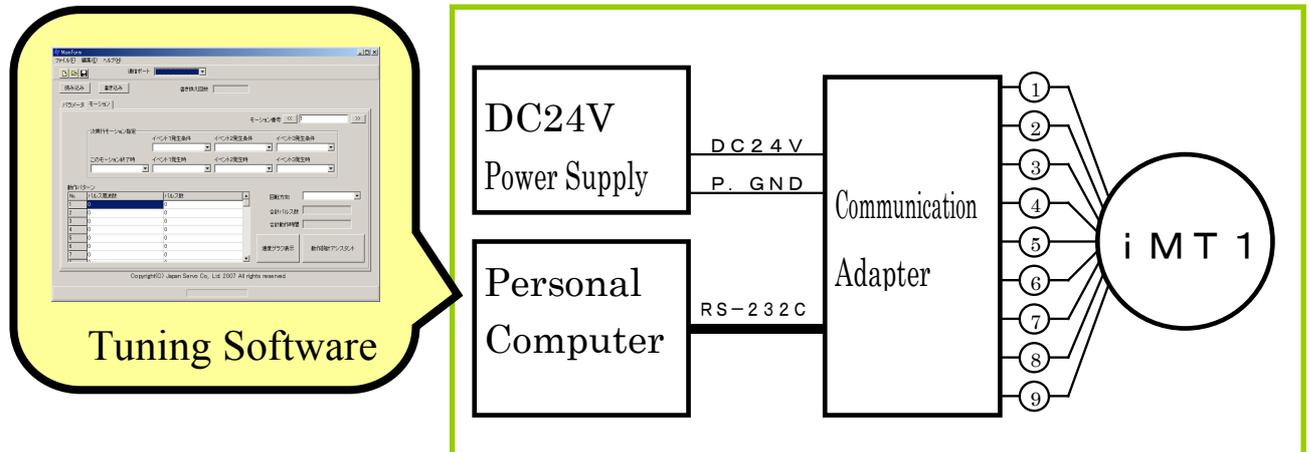


Figure C. Serial Communication Function(UART) with Personal Computer

•Application Example

Right figure is an example of the detection of the work that has flowed by the belt conveyor with the sensor coming to the position, and doing by the operation pushed out by actuator (**iMT1**).

Because the sensor signal can be input directly to **iMT1**, and **iMT1** itself judge it, a master controller becomes unnecessary.

Besides this, the application in a wide field such as transportation device, vending machine, amusement equipment, medical equipment, and precise pump can be expected.

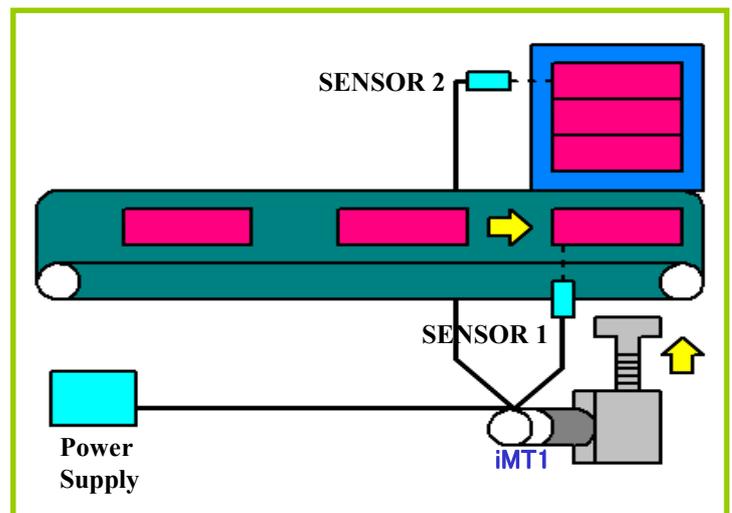


Figure D. Example of **iMT1**'s Application

•Correspond to the custom demand

iMT1 is a motor system that makes it up with the customer.

The correspondence of the following custom goods is received according to the customer's demand.

- Customizing of I/O signal function
- Custom motion development
- Speed control by analog signal input (The usage like brushless DC motor can be done)
- Motor, Gear head special specification
- Connector, Cable special specification

First of all, please consult us!!

STANDARD PRODUCT SPECIFICATION

General Specification

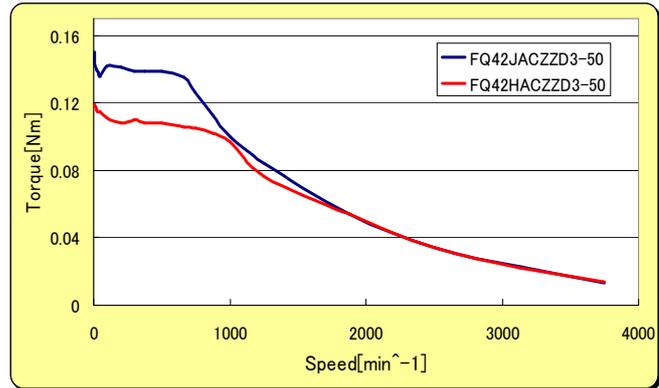
Item	Specification
Supply Voltage	DC24V ± 10%
Power Supply Current Capacity	Min. 2.0A
Input Signal Level	Lo : 0V, Hi : 5V Or Open collector type
Drive Method	Constant Current Control with Microstep
Motor Current	Max. 1.0 A/phase (0-Peak)
Step Angle	1.2°
Microstep	1/1,1/2,1/4, 1/8,1/16,1/32
Serial Communication	UART, Speed 19.2kbps
General-purpose input terminal	3 terminals (GIP1~3)
Input Signal Type	TTL or Open Collector
Alarm Signal Output	1 terminal (Share with Serial Communication terminal)
Motion Program Size	Max. 63 steps of motion
Operation Temperature	-10~+40 °C
Operation Humidity	35~85%RH (None-Condensing)

Line Up (※2)

Type	L [mm] ※3	Holding Torque [mN.m]	Pull Out Torque [mN.m]
FQ42HACZZD3-50	52.5	Min. 120	Min. 80 (at 120min ⁻¹)
FQ42JACZZD3-50	58.0	Min. 160	Min. 100 (at 120min ⁻¹)

※2: The Gear head (with ratio 1:5) is prepared.
 ※3: iMT1's Length as shown on "OUTLINE DRAWING".

Pull-out Torque Specification



OUTLINE DRAWING (Dimension:mm, without Gear head)

